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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,900	07/24/2003	Hwan-Guem Kim	1293.1781	1198
21171	7590	10/12/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				BEATTY, ROBERT B
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

APR

Office Action Summary	Application No.	Applicant(s)	
	10/625,900	KIM ET AL.	
	Examiner Robert Beatty	Art Unit 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 01 August 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3,7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (EP 1,217,466 A1) in view of Namiki et al.

Lee (EP) teach a fusing device for an electrophotographic imaging device comprising a fusing roller 210 including a heating pipe 262 disposed in the center of the fusing roller, a heating element 213/212 disposed around the heating pipe in order to generate heat, and a Teflon protective outer layer (see Fig.5 and paragraphs 37-40). A pressure roller 230 will press against the fusing roller in order to form a nip and wherein a paper having an unfused toner image will be passed into the nip so that the toner image is fused by heat and pressure. The heat pipe 262 is sealed and a working fluid 214 is stored within the heat pipe. Specifically, Lee (EP) teach everything claimed except the outer layer being a silicone rubber.

Namiki et al. teach a fixing device having a heating roller 1 having a heated working fluid 5 in the interior of the heating roller and an outer layer of silicone rubber (col. 3, lines 25-31) excellent in surface lubrication. It would have been obvious to one of ordinary skill in the art at the time the invention was made to

substitute a silicone rubber layer for the outer protective layer in Lee because the heating roller will have excellent surface lubrication as taught in Namiki et al.

2. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Namiki et al. as applied to claims 1-3,7 above, and further in view of Hirst et al.

The combination of Lee in view of Namiki et al. taught supra discloses most of what is claimed except the silicone rubber layer having a thickness between 1-3 mm, and the diameter of the fusing roller being between 35-50 mm.

Hirst et al. teach a fusing device comprising a fusing roller 336 and a pressure roller 338 forming a nip with the fusing roller. A silicone rubber outer layer having a thickness of 2.5 mm is an outside layer of the fusing roller. The fusing roller has a diameter of 45 mm plus 2.5 mm for the silicone rubber layer (col.5, lines 24-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the fusing roller in Lee (EP) would have a diameter within applicant's claimed range because this diameter size is known in the state of the art for the purpose of fusing the toner image without making the image forming apparatus too large.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Namiki et al. as applied to claims 1-3,7 above, and further in view of Moriyama(JP# 59-204071).

Lee in view of Namiki et al. taught supra discloses most of what is claimed except the outer surface layer being adhesively attached to the heater with a heat resistant adhesive. Moriyama (JP) teach a fixing device having a heat roller 21 which comprises an aluminum core 22 heated by a heater inside the core, and a Teflon or silicone rubber outer layer 23 over the core. The outer layer is adhesively secured to the core with an adhesive coating therebetween. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an adhesive layer to secure the outer layer to the inner core heater because the outer layer can be adequately adhered and will not readily come off the core during normal fixing operations. It is noted that the adhesive coating has some heat resistance (i.e. it is not a perfect thermal conductor).

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Knechtel teach a fixing device comprising a fixing roller and pressure roller wherein the fixing roller has an exterior surface layer of either Teflon or silicone rubber.

5. Applicant's arguments filed 8/1/2005 have been fully considered but they are not persuasive.

The applicant argues that Lee should have a "metallic outer layer" so that the fusing roller could be heated up instantly. However, the examiner is not modifying Lee's metallic layer 212 which is sandwiched between the heating coil 213 and the outer Teflon layer 211 (see Fig.6). Thus applicant's arguments regarding this layer are not convincing.

Applicant further argues that since Lee has a Teflon layer, there would be no reason for Lee to need or desire a silicone rubber layer. While Lee's Teflon layer would perform adequately, the examiner believes that it would be obvious to one of ordinary skill to use a silicone rubber layer instead of a Teflon layer since they are both used for the same purpose. That is, both Teflon and silicone rubber are notoriously well known to prevent offset (toner transferring to the recording medium) / improve surface releasability (lubrication). As evidenced by the prior art Knechtel, which is cited but not relied upon, the alternative use of Teflon and silicone rubber is specifically pointed out (col.1, lines 23-30). The use of one or the other is believed to be well within the grasp of one of ordinary skill in the art at the time the invention was made and therefore patentability cannot rest upon the use of one or the other.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Beatty whose telephone number is (571) 272-2130. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert Beatty
Primary Examiner
Art Unit 2852

October 10, 2005